

We claim:

1. A decoding method, comprising:  
applying a portion of code data to an analog decoder core prior to each of a plurality of read operations in which decoded data is read from the analog decoder core, the code data having a code length and the analog decoder core having an input with an input length that is less than the code length.
2. The method of claim 1, wherein each applying step applies new code data to a different part of the input of the analog decoder core.
3. The method of claim 2, wherein the new code data applied by a subsequent applying step is shifted along the input length of the input as compared to new code data applied by a previous applying step.
4. The method of claim 3, further comprising:  
reading a portion of an output of the analog decoder core after each applying step, the read portion being less than an output length of the output of the analog decoder core.
5. The method of claim 4, wherein each reading step reads decoded data from a different portion of the output of the analog decoder core.
6. The method of claim 5, wherein the decoded data read by a subsequent reading step is shifted along the output length of the output as compared to the decoded data read by a previous reading step.

7. The method of claim 6, wherein the input has corresponding inputs to the outputs of the output, and the reading step reads a portion of the output that is shifted by a fixed amount from the corresponding input to which the previous applying step applied new code data.

8. The method of claim 1, wherein an initial applying step applies new code data to the entire input length of the input.

9. The method of claim 1, wherein the applying steps subsequent to the initial applying step apply new code data to less than the entire input length of the input.

10. The method of claim 1, comprising:  
reading a portion of an output of the analog decoder core after each applying step, the read portion being less than an output length of the output of the analog decoder core.

11. The method of claim 10, wherein each reading step reads decoded data from a different part of the output of the analog decoder core.

12. The method of claim 11, wherein the decoded data read by a subsequent reading step is shifted along the output length of the output as compared to the decoded data read by a previous reading step.

13. The method of claim 1, comprising:  
controlling the analog decoder core to start a forward recursion and a backward recursion in an initialized state.

14. The method of claim 13, wherein the initialized state is an all zero state.

15. A decoding apparatus comprising:  
an analog decoder core with an input for receiving code data, the input having an input length; and  
a controller that applies code data to the analog decoder core, the code data having a code length that is greater than the input length.

16. The apparatus of claim 15, wherein the controller applies the code data to the analog decoder core, such that previously applied code data is overwritten by updated code data.

17. The apparatus of claim 16, wherein the analog decoder core has an output from which the controller reads out decoded data; and

wherein the controller reads out decoded data from the analog decoder core before the previously applied code data is overwritten by the updated code data.

18. The apparatus of claim 15, comprising a plurality of the analog decoder cores,  
wherein the controller applies a portion of the code data to each of the analog decoder cores.